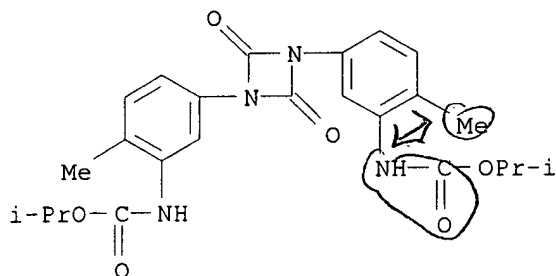


L Number	Hits	Search Text	DB	Time stamp
1	119	adhesive and hot adj melt and diisocyanate	DERWENT	2002/12/30 09:00

L4 ANSWER 4 OF 15 REGISTRY COPYRIGHT 2002 ACS
 RN 101941-85-9 REGISTRY
 CN Carbamic acid, [(2,4-dioxo-1,3-diazetidine-1,3-diyl)bis(6-methyl-3,1-phenylene)]bis-, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Carbanilic acid, 3,3'-(2,4-dioxo-1,3-uretidinediyl)bis[6-methyl-, diisopropyl ester (7CI)
 FS 3D CONCORD
 MF C24 H28 N4 O6
 SR CAOLD
 LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CASREACT
 (*File contains numerically searchable property data)



1,3-bis(3,6-dimethylphenyl)
 -2,4-dioxo-1,3-diazetidine

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1962 TO DATE)
 2 REFERENCES IN FILE CAPLUS (1962 TO DATE)
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=>

Desmodium TT
 (not blocked)

6873

DERWENT-WEEK: 198405

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TITLE: Hot melt adhesive compsn. - contg. saponified ethylene!-vinyl!
ester
copolymer, poly:isocyanate cpd. and terpene-phenol! resin and/or liq.
polybutadiene

PATENT-ASSIGNEE: UNITIKA LTD[NIRA]

PRIORITY-DATA: 1982JP-0101216 (June 11, 1982)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 58217575 A	December 17, 1983	N/A	006
N/A			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
JP 58217575A	N/A	1982JP-0101216	June
11, 1982			

INT-CL (IPC): C09J003/16

ABSTRACTED-PUB-NO: JP 58217575A

BASIC-ABSTRACT: Compsn. comprises (A) saponified ethylene/vinyl ester
copolymer, (B) a polyisocyanate cpd. contg. at least 2 protected
isocyanate
gps. per mol. and (C) terpene/phenol resin and/or liq. polybutadiene
contg. at
least 2 terminal OH gps. per mol. When reheated to the hot melt temp.
the hot
melt adhesive compsn. retains its adhesion.

(A) has melt index of 0.1-1000 and contg. at least 50 wt.% ethylene
unit and at
least 5 mol.% vinyl alcohol unit. (B) is pref. ethylene-, propylene-,
hexamethylene-, phenylene- or tolylene-diisocyanate, 4,4'-methylene
bis(phenylisocyanate), xylylene- or isophorone diisocyanate or
bis(isocyanatomethyl) cyclohexane or an adduct of such an isocyanate
with a low
mol.wt. polyol (e.g. ethylene-, propylene- or hexamethylene-glycol or
trimethylol propane) being blocked by a blocking agent (e.g. phenol,
cresol,
nitrophenol, epsilon-caprolactam, delta-valerolactam,
beta-propiolactam,
dimethyl or diethyl malonate, ethyl acetoacetate, acetylacetone,
methanol,
ethanol, n-butyl alcohol, n-amyl alcohol, ethylene glycol monomethyl
ether,
formaldoxime, acetaldoxime, methylethylketoxime, benzophenone-oxime or
cyclohexanone oxime). The terpene resin is one modified by phenol or
copolymer
of beta-pinene and phenol resin. The liq. butadiene is atactic

DERWENT-ACC-NO: 1987-328753
DERWENT-WEEK: 199828
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TITLE: Solvent free hot melt polyurethane adhesive compsn. and its
prepn. -
has superior initial adhesion and heat resistance

INVENTOR: DAVIS, I; STANLEY, H

PATENT-ASSIGNEE: ABLESTIK LAB[ABLEN], NAT STARCH & CHEM CORP[NATT],
NAT
STARCH & CHEM INVESTMENT[NATT], NAT STARCH & CHEM INVESTMENT HOLDING
COR[NATT]

PRIORITY-DATA: 1986US-0859539 (May 5, 1986)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
EP 246473 A	November 25, 1987	E	022
N/A			
NO 303128 B1	June 2, 1998	N/A	000
C09J 175/04			
NO 8701793 A	November 30, 1987	N/A	000
N/A			
ZA 8703170 A	January 18, 1988	N/A	000
N/A			
EP 246473 B	April 18, 1990	N/A	000
N/A			
DE 3762349 G	May 23, 1990	N/A	000
N/A			
JP 05311145 A	November 22, 1993	N/A	015
C09J 175/04			
JP 94004840 B2	January 19, 1994	N/A	011
C09J 175/04			
FI 91081 B	January 31, 1994	N/A	000
C09J 175/04			
CA 1337093 C	September 19, 1995	N/A	000
C09J 175/04			

DESIGNATED-STATES: CH DE FR GB IT LI NL SE CH DE FR GB IT LI NL SE

CITED-DOCUMENTS: EP 118171; FR 2213974 ; FR 2299350 ; GB 2137638

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
EP 246473A	N/A	1987EP-0106244	April
29, 1987			
NO 303128B1	N/A	1987NO-0001793	April
29, 1987			
NO 303128B1	Previous Publ.	NO 8701793	N/A

DERWENT-ACC-NO: 1988-014552
DERWENT-WEEK: 198803
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TITLE: Solid hot-melt polyurethane adhesive modified with addn.
copolymer -
esp. low mol. wt. poly:alkyl:methacrylate!, to improve bond strength
and
initial adhesion to a wide variety of substrates

INVENTOR: DAVIS, I; STANLEY, H

PATENT-ASSIGNEE: NAT STARCH & CHEM CORP[NATT], ABLESTIK LAB[ABLEN],
NAT
STARCH & CHEM INVESTMENT[NATT]

PRIORITY-DATA: 1987US-0043140 (April 30, 1987) , 1986US-0859539 (May 5,
1986)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
AU 8772503 A	November 26, 1987	N/A	000
N/A			
CA 1337093 C	September 19, 1995	N/A	000
C09J 175/04			
DK 165698 B	January 4, 1993	N/A	000
C09J 175/04			
DK 8702267 A	November 6, 1987	N/A	000
N/A			
FI 8701966 A	November 6, 1987	N/A	000
N/A			
FI 91081 B	January 31, 1994	N/A	000
C09J 175/04			
JP 05311145 A	November 22, 1993	N/A	015
C09J 175/04			
JP 63006076 A	January 12, 1988	N/A	000
N/A			
JP 94004840 B2	January 19, 1994	N/A	011
C09J 175/04			
JP 94078515 B2	October 5, 1994	N/A	014
C09J 175/04			
KR 9004705 B	July 2, 1990	N/A	000
N/A			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
AU 8772503A	N/A	1987AU-0072503	May
5, 1987			
CA 1337093C	N/A	1987CA-0536315	May
4, 1987			
DK 165698B	N/A	1987DK-0002267	May
4, 1987			
DK 165698B	N/A	DK 8702267	N/A

DERWENT-ACC-NO: 1987-343568
DERWENT-WEEK: 198749
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TITLE: Polyurethane hot melt adhesive - with lower melt viscosity,
contg.
aromatic di:carboxylic acid residues

INVENTOR: REEVES, J

PATENT-ASSIGNEE: SCOTT BADER & CO LTD[SCOB]

PRIORITY-DATA: 1986GB-0013573 (June 4, 1986)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
EP 248658 A	December 9, 1987	E	011
N/A			

DESIGNATED-STATES: DE ES FR GB IT NL SE

CITED-DOCUMENTS: 1.Jnl.Ref; A3...198843 ; GB 1146361 ; GB 2185988 ; JP
59172576
; No-SR.Pub ; US 4166873

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
EP 248658A	N/A	1987EP-0304923	June
3, 1987			

INT-CL (IPC): C08G018/42; C09J005/06

ABSTRACTED-PUB-NO: EP 248658A

BASIC-ABSTRACT: A polyurethane hot melt adhesive is claimed comprising
a mixt.
or reaction prod. of: (a) a crystalline polyester diol (I) having an
acid
residue at least 50 (pref. at least 70 and partic. 100) molar % of
which is
derived from a symmetrical aromatic dicarboxylic acid (II); and (b) a
diisocyanate.

Opt. the acid residue of (I) may additionally be derived from a linear
aliphatic dicarboxylic acid (III). Pref. (I) has a glycol residue
derived from
at least two glycols.

Pref. the adhesive contains no free isocyanate gps. and opt. may
additionally
comprise an isocyanate blocking agent or may be a mixt. of (I) and a
diisocyanate-terminated dicarbamate ester (IV).

DERWENT-ACC-NO: 1988-297419
DERWENT-WEEK: 199644
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TITLE: Hot melt adhesive compsn. - contains polystyrene and
polyurethane
prepolymer obt'd. from poly:oxy:tetra:methylene diol and di:isocyanate

PATENT-ASSIGNEE: ASAHI GLASS CO LTD[ASAG]

PRIORITY-DATA: 1987JP-0050289 (March 6, 1987)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 63218782 A	September 12, 1988	N/A	006
N/A			
JP 2539813 B2	October 2, 1996	N/A	005
C09J 175/08			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
JP 63218782A	N/A	1987JP-0050289	March
6, 1987			
JP 2539813B2	N/A	1987JP-0050289	March
6, 1987			
JP 2539813B2	Previous Publ.	JP 63218782	N/A

INT-CL (IPC): C08G018/48; C08G018/50 ; C08L075/04 ; C08L075/08 ;
C09J003/16 ; C09J175/08

ABSTRACTED-PUB-NO: JP 63218782A

BASIC-ABSTRACT: Adhesive compsn. comprises (A) 50-90 wt.% polyurethane
prepolymer prepd. by addn. reacting polyol(s) comprising
polyoxytetramethylene
diol and diisocyanate in an equiv. ratio of NCO/OH = 1.2-2.4 and having
viscosity = 10,000-80,000 cps. at 25 deg.C., and (B) 50-10 wt.%
polystyrene
oligomer having mol. wt. = upto 2,000. The compsn. has viscosity = 500
- 6,000
cps. at 100 deg.C..

Pref. diol is polyoxytetramethylene homopolymer prepd. by addn.
reacting a diol
with THF; or copolymer prepd. by addn. reacting a diol with THF and
alkylene
oxide; copolymer prepd. by addn. reacting the homopolymer with addn.
polymerisable cyclic ether (e.g. alkylene oxide) or addn. polymerisable
cyclic
ester (e.g. caprolactone); or polyester of the homopolymer with a
dicarboxylic
acid. The isocyanate is pref. diphenyl-, tolylene-, naphthalene-,
xylylene-,

DERWENT-ACC-NO: 1990-167494
DERWENT-WEEK: 199022
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TITLE: Hot melt adhesive compsn. for electronic parts, etc. -
comprises
polyurethane poly-isocyanate pre-polymer and rosin ester

PATENT-ASSIGNEE: DAINICHISEIKA COLOR & CHEM MFG[DAIC], UKIMA GOSEI
KK[UKIMN]

PRIORITY-DATA: 1988JP-0261906 (October 18, 1988)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 02107687 A	April 19, 1990	N/A	000
N/A			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO
APPL-DATE		
JP 02107687A	N/A	1988JP-0261906
October 18, 1988		

INT-CL (IPC): C09J175/04

ABSTRACTED-PUB-NO: JP 02107687A

BASIC-ABSTRACT: Compsn. comprises (A) 40-90 pts.wt. polyurethane
polyisocyanate
prepolymer, pref. obtd. by reaction of polyol (A-1) having an average
mol. wt.
higher than 700 and organic diisocyanate (A-2) and contg. less than 6
wt.% of
NCO gps. and (B) 10-60 wt.% rosin ester, pref. having a softening temp.
lower
than 110 deg.C and an acid value less than 10 KOH mg/g.

Pref (A-1) is a polyols e.g. polyester polyol, polyether polyol or
polycarbonate polyol, having a mol.wt. of 700-4,000. (A-2) is organic
polyisocyanate e.g. TDI, HMDI or IPDI. Chain extender and isocyanate
adduct
are opt. used. (A) is synthesised in a NCO/OH ratio higher than 1.1.
(B) is
an ester of rosin (abietic acid) or its hydrogenated and
disproportionated
deriv. and polyol e.g. glycerin, pentaerythritol, diethylene glycol,
and
triethylene glycol.

USE/ADVANTAGE - Used in industries e.g. car, construction material,
electronic
part, food and medicine and textile. The hot melt adhesive has good
processability, is crosslinkable with humidity, and has good heat
resistance

DERWENT-ACC-NO: 1990-373573
DERWENT-WEEK: 199050
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TITLE: Reactive hot melt compsn. for structural adhesive - comprises urethane!

prepolymer(s) and thermoplastic rubber, for thermosetting paint, etc.

PATENT-ASSIGNEE: MITSUI TOATSU CHEM INC[MITK]

PRIORITY-DATA: 1989JP-0091949 (April 13, 1989)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 02272013 A	November 6, 1990	N/A	000
N/A			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
JP 02272013A	N/A	1989JP-0091949	April 13, 1989

INT-CL (IPC): C08G018/67; C08L075/04 ; C09D175/04 ; C09J175/04

ABSTRACTED-PUB-NO: JP 02272013A

BASIC-ABSTRACT: Reactive hot melt compsn. comprises (A) urethane prepolymer obtd. by reacting satd. hydrocarbon polyol with hydroxyl gps in terminals and diisocyanate cpd., (B) urethane prepolymer obtd. by reacting polyol(s) of or mixt. of polycarbonate polyols, propylene and/or ethylene-oxide adducts of glycerin and propylene and/or ethylene oxide adducts of bisphenol diol and (C) thermoplastic rubber ingredient.

USE ADVANTAGE - Provides reactive hot melt compsns in that initial adhesion and coat formation of compsn. is carried out in hot melt state and urethane formation (curing reaction) of it follows them to give cured coat with heat and weather resistance and elasticity useful as structural adhesives and thermosetting paints.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS:

REACT HOT MELT COMPOSITION STRUCTURE ADHESIVE COMPRISE POLYURETHANE PREPOLYMER
THERMOPLASTIC RUBBER THERMOSETTING PAINT

DERWENT-CLASS: A18 A25 A81 A82 G03

DERWENT-ACC-NO: 1991-012456
DERWENT-WEEK: 199102
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TITLE: Adhesion of polyolefin-foaming sheet having moisture resistance
- is
effected using moisture-curing polyurethane hot-melt adhesive of
specified
softening pt.

PATENT-ASSIGNEE: HITACHI KASEI POLYM[HITAN]

PRIORITY-DATA: 1989JP-0107406 (April 28, 1989)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 02286773 A	November 26, 1990	N/A	000
N/A			
JP 95094651 B2	October 11, 1995	N/A	004
C09J 175/04			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
JP 02286773A	N/A	1989JP-0107406	April
28, 1989			
JP 95094651B2	N/A	1989JP-0107406	April
28, 1989			
JP 95094651B2	Based on	JP 2286773	N/A

INT-CL (IPC): B29C065/40; B29C065/52 ; B29K023/00 ; B29K023:00 ;
B29K105/04 ; B29K105:04 ; B32B005/18 ; C09J175/04

ABSTRACTED-PUB-NO: JP 02286773A

BASIC-ABSTRACT: Adhesion of a polyolefin-foaming sheet to (A) an
adherend (B)
is carried out by using a moisture-curing polyurethane hot-melt
adhesive (C);
wherein (C) has softening pt. of less than 40 deg C and is applied at
80-140
deg C.

The main component of (C) adhesives is pref.
diphenylmethane-diisocyanat- e,
toluene-diisocyanate etc., of which residual NCO-gp. is pref. 0.5-10
wt% per
urethane polymer. Compsn. of (C) is pref. 100 pts. wt. of the
urethane-polymer, 0-30 pts. wt. of thermoplastic resin e.g. copolymer
of
ethylene, urethane, vinyl chloride, epoxy-resin etc., 0-100 pts. wt.
of
tackifier-resin, 0-10 pts. wt. of plasticiser, and 0-50 pts. wt. of
filler;

DERWENT-ACC-NO: 1991-039636
DERWENT-WEEK: 199106
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TITLE: Reactive hot melt adhesive with instant initial bond strength -
comprises aliphatic polyester urethane prepolymer having at least
2-isocyanate
gps., and satd. polyester resin

PATENT-ASSIGNEE: NITTA GELATIN KK[NITTN], NITTA KK[NITTN], NITTA
VENEER
KOGYO KK[NITTN]

PRIORITY-DATA: 1989JP-0127362 (May 20, 1989)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 02305881 A	December 19, 1990	N/A	000
N/A			
JP 95017890 B2	March 1, 1995	N/A	007
C09J 175/04			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
JP 02305881A	N/A	1989JP-0127362	May
20, 1989			
JP 95017890B2	N/A	1989JP-0127362	May
20, 1989			
JP 95017890B2	Based on	JP 2305881	N/A

INT-CL (IPC): C08G018/42; C09J175/04

ABSTRACTED-PUB-NO: JP 02305881A

BASIC-ABSTRACT: The hot melt adhesive comprises a combination of an
aliphatic
polyester urethane prepolymer, with at least two isocyanate gps. in the
mol.,
and a satd. polyester resin.

USE/ADVANTAGE - Reactive hot melt adhesives are obtd. with both hot
melt-type
and reactive-type adhesives properties, such as instant initial bond
and heat
resistant strengths with flexible adhered layers. Addn. of a thickener
to the
hot melt adhesive further improves the initial bond strength and bond
strength
after curing.

In an example, 100 pts.wt. polycaprolactonediol (with a mean mol.wt.
of 975)
is dehydrated for 2 hrs. at 100 deg.C under 3 mmHg. To the

DERWENT-ACC-NO: 1991-069119
DERWENT-WEEK: 199740
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TITLE: High weathering-resistant hot-melt adhesive - comprises
hardened prod.
obtd. from compsn. contg. hydrogenated hydroxy-contg. liq. diene!
polymer and
polyisocyanate

PATENT-ASSIGNEE: IDEMITSU PETROCHEM CO[IDEM]

PRIORITY-DATA: 1989JP-0150556 (June 15, 1989)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 03017176 A	January 25, 1991	N/A	000
N/A			
JP 2648782 B2	September 3, 1997	N/A	005
C09J 175/04			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
JP 03017176A	N/A	1989JP-0150556	June
15, 1989			
JP 2648782B2	N/A	1989JP-0150556	June
15, 1989			
JP 2648782B2	Previous Publ.	JP 3017176	N/A

INT-CL (IPC): C08G018/62; C08G018/69 ; C09J175/04 ; C09J175/14

ABSTRACTED-PUB-NO: JP 03017176A

BASIC-ABSTRACT: A hot-melt adhesive comprises a hardened product prepd.
by
hardening a liq. polymer compsn. comprising hydrogenated OH-contg. liq.
diene
polymer and a polyisocyanate cpd. in an equiv. ratio of NCO/OH of
0.3-2.0; or a
reactive hot-melt adhesive comprises a semi-hardened or hardened
product of
such a diene polymer and such a polyisocyanate cpd. in an equiv. ratio
of
NCO/OH of 2.0-20.

The liq. diene polymer is e.g., polybutadiene, polyisoprene, etc.
prepd. by
heating the monomer(s) in the presence of H₂O₂. It is hydrogenated by
dissolving the polymer in a solvent and reacting it at 20-300 deg.C and
a H₂
pressure of 0-200 kg/cm² G for 0.1-10 hr. in the presence of a
hydrogenating
catalyst (e.g., Ni, Pd, Ru, or Pt). Pref. it has a number average mol.

DERWENT-ACC-NO: 1991-336887
DERWENT-WEEK: 199146
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TITLE: Cloth bonding with rigid substrate board for furniture - by
using hot
melt adhesive of moisture-curable urethane! resin and pressing against
cooled
platen, for heat resistance

PATENT-ASSIGNEE: PARON KK[PARON]

PRIORITY-DATA: 1990JP-0024135 (February 1, 1990)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 03227219 A	October 8, 1991	N/A	000
N/A			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO
APPL-DATE		
JP 03227219A	N/A	1990JP-0024135
February 1, 1990		

INT-CL (IPC): B29C065/40; B29K075/00 ; B29L031/44 ; C09J005/06

ABSTRACTED-PUB-NO: JP 03227219A

BASIC-ABSTRACT: Skin cloth is bonded with rigid substrate board with
hot melt
adhesive comprising moisture-curable urethane resin at 120 deg.C by
pressing
composite board against cooled platen. Pref. the adhesive comprises
urethane
prepolymer prepd. from diisocyanate and diol, thermoplastic polymer
which does
not react with NCO gp., tackifier which does not react with NCO gp.,
antioxidant, catalyst, etc. Prepolymer is hardened in presence of
water,
urethane bond crosslinked into allophanate bond and urea bond into
biuret bond.
Prepolymer is melted and solidified by cooling while controlling
chemical
reaction and completing bonding by chemical reaction in presence of
moisture.
Pressing and cooling are carried out by water-cooling roll- or cooling
glass-press.

ADVANTAGE - Composite board has high heat resistance, creeping and cold
resistance and high reliability. Process has high bonding workability.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS:

DERWENT-ACC-NO: 1991-374095
DERWENT-WEEK: 199917
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TITLE: Heat resistant reactive hot melt adhesive - contg. urethane!
prepolymer
of ester! poly:ol obtd. by using polymerised rosin as acid component

PATENT-ASSIGNEE: ARAKAWA KAGAKU KOGYO KK[ARAK]

PRIORITY-DATA: 1990JP-0050514 (February 28, 1990)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 03252490 A	November 11, 1991	N/A	006
N/A			
JP 2874135 B2	March 24, 1999	N/A	006
C09J 175/06			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
JP 03252490A	N/A	1990JP-0050514	
February 28, 1990			
JP 2874135B2	N/A	1990JP-0050514	
February 28, 1990			
JP 2874135B2	Previous Publ.	JP 3252490	N/A

INT-CL (IPC): C08G018/42; C09J175/06

ABSTRACTED-PUB-NO: JP 03252490A

BASIC-ABSTRACT: Hot melt adhesive contains a urethane prepolymer
composed of
polyester polyol (A) obtd. by using at least 20 wt.% polymerised rosin
as an
acid component and polyisocyanate (B) and which has an isocyanate gp.

Polymerised rosin pref. contains 50 wt.% resin acid dimer. Polyol of
polyester
polyol is pref. e.g. ethylene glycol, diethylene glycol, glycerine or
sorbitol.
Polyisocyanate is pref. e.g. 2,4-tolylenediisocyanate, hexamethylene
diisocyanate, 1-5-naphthylene diisocyanate or 1,3-phenylene
diisocyanate.
Urethane prepolymer of 100,000 cps, pref. 1,000-50,000 cps, at 100
deg.C in
melt viscosity is prepd. by allowing polyisocyanate and polyester
polyol to
react on each other so that the equiv. ratio of the isocyanate gp. to
the OH
gp. may be 1.0-3.0.

USE/ADVANTAGE - Reactive hot melt adhesive is high in heat resistance

DERWENT-ACC-NO: 1992-256568
DERWENT-WEEK: 200039
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TITLE: Seat material adhesive process, for 1st stage condensn. - by
adhering
cushion material, spray coating with wet hardening hot melt urethane!
adhesive, laminating hot pressing

PATENT-ASSIGNEE: SANSUTA GIKEN KK[SANSN]

PRIORITY-DATA: 1990JP-0305002 (November 8, 1990)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 04175392 A	June 23, 1992	N/A	004
C09J 175/06			
JP 3066062 B2	July 17, 2000	N/A	004
C09J 175/06			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
JP 04175392A	N/A	1990JP-0305002	
November 8, 1990			
JP 3066062B2	N/A	1990JP-0305002	
November 8, 1990			
JP 3066062B2	Previous Publ.	JP 4175392	N/A

INT-CL (IPC): A47C003/00; B60N002/00 ; C08G018/77 ; C09J005/06 ;
C09J175/06 ; C09J175/08

ABSTRACTED-PUB-NO: JP 04175392A

BASIC-ABSTRACT: Adhesive is mfd. of blocked isocyanate contg. urethane
polymer
of formula A-B-A or A-(BA)_n-A, and which is mfd. by bonding
polyalkylene oxide
block (A) which has polyethylene oxide block opt. at terminal and
polyester
block (B) whose glass transition pt. is 0-100 deg. by excess
diisocyanate
cpd.. Process comprises adhering back n 1-10 to cushion
basic-material. After
spray-coating hot melt adhesive onto cushion basic material, basic
material is
laminated and hot-pressed. Heating and hardening are accelerated by
using
steam.

USE/ADVANTAGE - Appearance of seat material is maintained.

In an example, 60g of 4,4'-diphenyl methane diisocyanate is added to
100g of

DERWENT-ACC-NO: 1992-289111
DERWENT-WEEK: 200263
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TITLE: Reactive hot melt adhesive compsn. improved in machining
property -
comprising urethane prepolymer having technical isocyanate gps. obtd.
by
reacting polyester poly:ol with crude di:phenyl:methane:di:isocyanate

PATENT-ASSIGNEE: SEKISUI CHEM IND CO LTD[SEKI]

PRIORITY-DATA: 1990JP-0331179 (November 28, 1990)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 3317698 B2	August 26, 2002	N/A	004
C09J 175/06			
JP 04198387 A	July 17, 1992	N/A	006
C09J 175/06			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
JP 3317698B2	N/A	1990JP-0331179	
November 28, 1990			
JP 3317698B2	Previous Publ.	JP 4198387	N/A
JP 04198387A	N/A	1990JP-0331179	
November 28, 1990			

INT-CL (IPC): C09J175/06

ABSTRACTED-PUB-NO: JP 04198387A

BASIC-ABSTRACT: Compsn. is composed of a urethane prepolymer having a
terminal
isocyanate gp.. The urethane prepolymer is obtd. by reaction of
polyesterpolyol consisting of at least one crystalline polyesterpolyol
m.pt.
above 50 deg. C (90 -40 pts. wt.) and at least one non-crystalline
polyesterpolyol (10-60 pts. wt.) with crude
diphenylmethanediisocyanate.

A reactive hot melt adhesive compsn. obtd. by reaction of 100 pts. wt.
polyesterpolyol consisting of at least one crystalline polyesterpolyol
(m.pt.
above 50 deg.C) (99 pts. wt. - 40 pts. wt.) and at least one
non-crystalline
polyesterpolyol (1 pt. wt. - 60 pts. wt.), and 10-200 pts. wt. rosin
ester
having hydroxyl gp. (hydroxyl value (over 20) and di-isocyanate is also
a new
reactive hot melt adhesive compsn.. In an example, the reactive
hot-melt

DERWENT-ACC-NO: 1992-352704
DERWENT-WEEK: 199243
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TITLE: Hot melt type reactive adhesive composite - contains urethane!
prepolymer including isocyanate radical, blocked by cpd. with active
hydrogen
radical

PATENT-ASSIGNEE: TOKYO INK KK[TOKIN]

PRIORITY-DATA: 1991JP-0035326 (February 5, 1991)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 04253785 A	September 9, 1992	N/A	004
C09J 175/04			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO
APPL-DATE		
JP 04253785A	N/A	1991JP-0035326
February 5, 1991		

INT-CL (IPC): C09J175/04

ABSTRACTED-PUB-NO: JP 04253785A

BASIC-ABSTRACT: The reactive adhesive composite contains urethane
prepolymer
whose number average molecular weight is 600-20,000, whose fused
viscosity is
under 100 Pa.s at 110 deg. C and which has an isocyanate radical. The
isocyanate radical is blocked by a cpd. which has an active hydrogen
radical.

USE/ADVANTAGE - The reactive adhesive composite has a storage stability
and is
capable of block dissociation at rather low temps.. It is also easy to
handle
at a low viscosity and has a heat-resistant ability after
adhere-setting.

In an example, 196 wt.% of polyester diol whose number average
molecular weight
is 4000 and which is produced by reacting suberin acid and
1,4-butanediol, 84
wt.% of polytetra methylene ether glycol whose number average molecular
weight
is 1,000, 73 wt.% of 4,4-diphenyl methane diisocyanate are mixed to
react at
110 deg. C for 2 hrs. to produce urethane prepolymer which has an
ioscyanate
radical at the terminal and whose fused viscosity is 9 Pa.s. Then, 36
wt.% of

DERWENT-ACC-NO: 1993-105418
DERWENT-WEEK: 199313
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TITLE: Water-barrier tape for power cable buried in ground - comprises metallic layer laminated with plastic film, adhesive layer of polyester poly:ol, acrylonitrile-butadiene copolymer, isocyanate cpd. and tert. amine, and hot melt polyester layer

PATENT-ASSIGNEE: YOKOHAMA RUBBER CO LTD[YOKO]

PRIORITY-DATA: 1991JP-0028637 (February 22, 1991)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 05047226 A	February 26, 1993	N/A	009
H01B 007/28			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO
APPL-DATE		
JP 05047226A	N/A	1991JP-0028637
February 22, 1991		

INT-CL (IPC): B32B007/10; B32B007/12 ; B32B015/08 ; C09J007/02 ; H01B007/28

ABSTRACTED-PUB-NO: JP 05047226A

BASIC-ABSTRACT: Tape comprises (A) a metallic layer, (B) a plastic film layer laminated on (A), (C) an adhesive layer comprising (C1) polyester polyol having a mol. wt. of 2000-100000, (C2) an OH-contg. acrylonitrile/butadiene copolymer, (C3) a polyfunctional isocyanate cpd. and (C4) a tert. amine cpd. in a wt. ratio of (C1)/(C2) of 70:30-97:3 and a mol. ratio of NCO/OH in (C1) + OH in (C2) of 0.5-10.0 and a mol. ratio of (N)/OH in (C2) of 0.1-3.0 and (D) a hot melt layer of modified thermoplastic copolyester resin.

Pref. (A) is 10-100 micron-thick metal foil (e.g. of Pb, Al, Cu or stainless steel) or 0.05-5 micron-thick metal layer prepd. by sputtering a metal on one side of (B). (B) is e.g. 15-200 micron-thick film of polyethylene terephthalate, PVC, polyimide or polycarbonate. (C1) is prepd. by reacting a dibasic carboxylic acid or a lactone with glycol. (C2) contains coupled acrylonitrile in an amt. of 10-50 wt.%. (C3) is e.g. hexamethylene diisocyanate, 2,4- or 2,6-tolylene diisocyanate. (C4) is e.g.

DERWENT-ACC-NO: 1993-112926
DERWENT-WEEK: 199314
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TITLE: Moisture-curable hot-melt adhesive - comprising urethane! resin
with
terminal isocyanate gps. obtd. by reacting aliphatic and aromatic
polyester
diol(s) with diisocyanate

PATENT-ASSIGNEE: DAINIPPON INK & CHEM KK[DNIN]

PRIORITY-DATA: 1991JP-0210869 (August 22, 1991)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 05051573 A	March 2, 1993	N/A	008
C09J 175/06			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO
APPL-DATE		
JP 05051573A	N/A	1991JP-0210869
August 22, 1991		

INT-CL (IPC): C09J175/06

ABSTRACTED-PUB-NO: JP 05051573A

BASIC-ABSTRACT: Adhesive comprises a urethane resin having isocyanate
gps. at
both terminals which is obtd. by reaction of mixed polyol consisting of
20-80
pts.wt. of (A) crystalline aliphatic polyester diol and 80-20 pts.wt.
of (B)
aromatic polyester diol with (C) diisocyanate. The aromatic polyester
diol has
a molecular wt. of 5000 to 40000. The mixed polyol also contains (D)
non-crystalline diol in an amt. of 20-50 pts.wt. per 100 pts.wt. of
(A)+(B).

The hot-melt adhesive comprises a mixt. of (I) urethane resin having
isocyanate
gps. at both terminals which is obtd. by reaction of (A) with (C) and
(II)
urethane resin having isocyanate gps. at both terminals which is obtd.
by
reaction (B) and (C). (II) has a molecule wt. of 5000-40000. It also
contains
(III) urethane resin obtd. by reaction of (D) with (C).

ADVANTAGE - The hot-melt adhesive is of moisture curing type and has
excellent
initial adhesive property(I

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DERWENT-ACC-NO: 1994-189185
DERWENT-WEEK: 199423
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TITLE: Active hot-melt adhesive for laminate of honeycomb sandwich panel -
contains crystalline urethane! prepolymer, amorphous urethane prepolymer and thermoplastic polymer

PATENT-ASSIGNEE: NITTA GELATIN KK[NITTN]

PRIORITY-DATA: 1992JP-0277573 (October 15, 1992)

PATENT-FAMILY:	PUB-DATE	LANGUAGE	PAGES
PUB-NO			
MAIN-IPC			
JP 06128551 A	May 10, 1994	N/A	005
C09J 175/06			

APPLICATION-DATA:	APPL-DESCRIPTOR	APPL-NO
PUB-NO		
APPL-DATE		
JP 06128551A	N/A	1992JP-0277573
October 15, 1992		

INT-CL (IPC): C09J175/06; C09J201/00

ABSTRACTED-PUB-NO: JP 06128551A
BASIC-ABSTRACT: The adhesive contains 5-40 wt.% of a crystalline urethane prepolymer, 30-85 wt.% of an amorphous urethane prepolymer and 10-30 wt.% of a thermoplastic polymer. Adhesion comprises laminating objects with the active hot-melt adhesive in open time and cold-pressing them.

The crystalline urethane prepolymer comprises a polyester polyol (A) pref. prepd. by allowing 1,6-hexane diol to react with sebacic acid and an organic isocyanate cpd. (B), e.g. tolylene diisocyanate. The amorphous urethane prepolymer comprises a polyester polyol (C) composed of a dicarboxylic acid and a glycol, a polyether polyol (D), e.g. polypropylene glycol, an olefin polyol (E), e.g. polybutadiene, and an organic isocyanate (B). The thermoplastic polymer is an ethylene-vinyl acetate copolymer or polyethylene.

USE/ADVANTAGE - The active hot-melt adhesive, having high initial cohesion, is used for lamination of a honeycomb sandwich panel or a decorative laminate.

DERWENT-ACC-NO: 1995-145089
DERWENT-WEEK: 199519
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TITLE: Reactive hot melt adhesive compsn., with good prim. adhesion strength -
comprises reaction prod. of low molecular wt. polyester and polyvalent isocyanate cpd.

PATENT-ASSIGNEE: DAIA BOND KOGYO KK[DAIAN], UNITIKA LTD[NIRA]

PRIORITY-DATA: 1993JP-0246166 (September 7, 1993)

PATENT-FAMILY:	PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC				
JP 07070538 A	March 14, 1995	N/A	007	
C09J 175/06				

APPLICATION-DATA:	PUB-NO	APPL-DESCRIPTOR	APPL-NO
APPL-DATE			
JP 07070538A	N/A	1993JP-0246166	
September 7, 1993			

INT-CL (IPC): C08G018/42; C09J175/06

ABSTRACTED-PUB-NO: JP 07070538A
BASIC-ABSTRACT: Compsn. comprises a reaction prod. of (A) a low molecular wt. polyester which has OH gp. at the terminals and a number average molecular wt. (Mw) of 1000-6000 and (B) a polyvalent isocyanate cpd. whose amt. is 1.5-4.0 equiv. w.r.t. the OH gp. value of (A). Polyester (A) comprises 10-90 wt.% of (A1) a low crystalline polyester which has a fusion heat vol. (FHV) measured by DSC, less than 5.0 cal/g and 90-10 wt.% of (A2) a high crystalline polyester having FHV of 5.0 cal/g or more.

Pref. cpd.(B) is tolylenediisocyanate, trimethylene diisocyanate or tetramethylenediisocyanate.

ADVANTAGE - The adhesive compsn. has good working properties, good prim. adhesion strength and good final working properties.

In an example, 80 pts. wt. polyester (A), 20 pts. wt. polyester (D) and 28 pts. wt. 4,4'-diphenylmethane diisocyanate were mixed in N2 at 120 deg. C for 2 hr. to give a reactive hot melt adhesive compsn.. Two sheets of No.9 canvas

DERWENT-ACC-NO: 1996-078565
DERWENT-WEEK: 199621
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TITLE: Isocyanate contg. reactive hot melt polyurethane system for use as adhesive - is prepd. from ester and/or ether contg. poly:ol and 2,4'-di:phenyl methane di:isocyanate, and has low initial viscosity and good temp. resistance

INVENTOR: BUECHNER, J; GANSTER, O ; HAENSEL, E ; MECKEL, W

PATENT-ASSIGNEE: BAYER AG[FARB]

PRIORITY-DATA: 1994DE-4426130 (July 22, 1994)

PATENT-FAMILY: PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
EP 693511 A1	January 24, 1996	G	007
C08G 018/76			
CA 2154243 A	January 23, 1996	N/A	000
C08G 018/30			
DE 4426130 A1	January 25, 1996	N/A	007
C08G 018/10			
JP 08060129 A	March 5, 1996	N/A	006
C09J 175/00			

DESIGNATED-STATES: DE FR GB IT

CITED-DOCUMENTS: EP 211235; EP 289945 ; EP 448825 ; WO 9309158

APPLICATION-DATA: PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
EP 693511A1	N/A	1995EP-0110708	July
10, 1995			
CA 2154243A	N/A	1995CA-2154243	July
19, 1995			
DE 4426130A1	N/A	1994DE-4426130	July
22, 1994			
JP 08060129A	N/A	1995JP-0200241	July
14, 1995			

INT-CL (IPC): C08G018/10; C08G018/30 ; C08G018/42 ; C08G018/76 ; C09J175/00 ; C09J175/04

ABSTRACTED-PUB-NO: EP 693511A
BASIC-ABSTRACT: An isocyanate contg. reactive hot-melt system with low initial viscosity and good temp. resistance is prepd. from a hydroxy polyol with ester and/or ether gps. and a hydroxy number of 15-150 and an ave.

DERWENT-ACC-NO: 1994-260768
DERWENT-WEEK: 200207
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TITLE: Preparation of reactive hot melt adhesive film - by immersing polyamide film in solvent to swell the film and dissolving hydrolysable organic silicon cpd. contg. isocyanate gp.

PATENT-ASSIGNEE: HITACHI KASEI POLYMER KK[HITAN]

PRIORITY-DATA: 1992JP-0276482 (September 3, 1992)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 06192638 A	July 12, 1994	N/A	004
C09J 177/00			
JP 3248007 B2	January 21, 2002	N/A	004
C09J 177/00			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	
APPL-DATE			
JP 06192638A	N/A	1992JP-0276482	
September 3, 1992			
JP 3248007B2	N/A	1992JP-0276482	
September 3, 1992			
JP 3248007B2	Previous Publ.	JP 6192638	N/A

INT-CL (IPC): C08G069/48; C09J007/00 ; C09J177/00

ABSTRACTED-PUB-NO: JP 06192638A

BASIC-ABSTRACT: Reactive hot melt adhesive film, capable of being crosslinked by moisture, is prepd. by immersing a polyamide film in a solvent to swell the film and dissolving a hydrolysable organic Si cpd. contg. a NCO gp. to react the polyamide film with the hydrolysable organic cpd.

The polyamide is prepd. by polycondensation reacting a dicarboxylic acid (e.g., adipic acid, beta-methyladipic acid, pimelic acid, cork acid, azelaic acid, sebacic acid, nonane-, decane-, undecane-, dodecane or eicosane dicarboxylic acid, dimer acid, 2-dodecenyl-, isododecenyl-, isooctyl- or n-octyl succinic acid or its anhydride, 1,2-polybutadiene- or hydrogenated 1,2-polybutadiene-contg. terminal COOH or isophthalic acid) and a diamine (e.g. propylene diamine, 1,2-diaminopropane, tetramethylene diamine,

PATENT SPECIFICATION

NO DRAWINGS

1,146,361

1,146,361



Inventors: EDWARD HENRY GEORGE SARGENT and KEITH ANDREW EVANS.

Date of filing Complete Specification: 12 December, 1967.

Application Date: 6 January, 1967.

No. 866/67

Complete Specification Published: 26 March, 1969.

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Index at Acceptance:—C3 R (32C12, 32C25, 32D1, 32G2, 32J2Y, 32L2X, 32L6A); B5 N (17X, 17Y, 19Y, 22X, 22Y, 24Y, 42X, 54X, 55Y, 67X, 69Y, 171, 172, 184, 221, 222, 234, 249, 250, 252Y, 254Y, 255Y, 280Y, 282Y, 283Y, 298X, 322Y, 326Y, 335 Y, 540, 682, 754).

Int. Cl.:—C 08 g 22/06.

COMPLETE SPECIFICATION

Polyurethane Composition

*you didn't
be reading*

We, DRAYTON RESEARCH LIMITED, of Tavistock Road, West Drayton, Middlesex, a British Company, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to polyurethane compositions useful as adhesives, and to composite structures comprising two or more integral parts joined by a layer of such adhesive.

A particular need exists for an adhesive which can be used with butyl rubber, for example, when using butyl rubber as a roofing material, or in the construction of shoes. Conventional adhesives have been found unsuitable for use with butyl rubber, whilst solutions of butyl rubber, which have been tried as adhesives, tend to dry out and cause defects in the rubber.

In accordance with the present invention a composition has been found which has considerable utility as an adhesive for butyl rubber. This composition is the reaction product of i) a polyester prepared by reacting a mixture containing isophthalic acid and a saturated aliphatic dicarboxylic acid of the formula $\text{HOOC}(\text{CH}_2)_n\text{COOH}$, where n is an integer of from 1-6, in a molar ratio in the range 1:1 to 5:1, with a 0.1-0.3 molar excess of a C_4 - C_6 saturated aliphatic diol, and ii) an aromatic diisocyanate, the amount of diisocyanate used being equivalent to or in excess of stoichiometric based on the free hydroxyl groups in the polyester. If desired up to 25% by weight of the isophthalic acid reactant may be replaced by terephthalic acid.

Preferably the polyester reactant is the

[Price 4s. 6d.]

reaction product of isophthalic acid, with or without terephthalic acid, adipic acid and 1,3-propylene glycol, 1,4-butane diol or neopentyl glycol. If extreme flexibility is desired in the final products 1,6-hexamethylene diol can be used as the diol component of the polyester.

In preparing the composition of the invention the polyester is prepared in a conventional manner from the specified ingredients, for example by heating at a temperature up to about 200°C under a stream of nitrogen. Preferably the condensation is continued until the polyester product has an acid value below 20, preferably below 10. At this stage and while the polyester is still liquid the diisocyanate is added. Suitable isocyanates include 2,4 and 2,6 toluene diisocyanate, diphenyl methane diisocyanates and also blocked isocyanates such as those sold under the trade marks Desmodur AP, Suprasec G and Hylene 500. As stated the amount of isocyanate added will be at least stoichiometric based on the free hydroxyl groups in the polyester. Preferably, the amount of isocyanate used will be slightly in excess of stoichiometric e.g. sufficient to give a molar ratio of isocyanate groups to free hydroxy groups in the range 1.1:1 to 1.2:1. The actual amount of isocyanate used will, of course, depend on the hydroxy equivalent of its polyester; generally speaking, however, the amount of diisocyanate used will be from 5-10% by weight based on the weight of the polyester. On cooling a solid polyurethane composition is obtained having useful properties as an adhesive.

The polyurethane composition of the invention may be used as a hot melt adhesive or as a solution adhesive. When used as

a hot melt adhesive the polyurethane composition may be applied in molten form to the substrate and, if desired, the coated substrate can then be cooled and stored before final remelting of the adhesive layer and application to the adherand.

When employed as a solution adhesive the polyurethane composition can be dissolved in an organic solvent such as ethyl acetate or methyl ethyl ketone, or, if an extremely quick drying adhesive is required, in acetone. After application to a substrate the adhesive can be allowed to dry to give a hard dry surface. The substrate can then be stored until required for use at which time the adhesive layer is warmed to soften the polyurethane adhesive and then the substrate can be applied to the desired adherand. When the substrate is in sheet form this can readily be rolled up after application of the adhesive layer without cracking of the adhesive. As mentioned above the greatest flexibility is obtained using long chain diol components in the polyester resin such as 1,4-butane diol and 1,6-hexamethylene diol.

The polyurethane composition of the invention is particularly useful as an adhesive for butyl rubber. However, it may also be used with laminates of polyvinyl chloride, natural rubber, polyethylene, polypropylene, leather, wood and aluminium.

The invention is illustrated by the following Examples:

Example I

1 mole of isophthalic acid and 1 mole of adipic acid are condensed with 2 moles of 1,3-butane diol in the presence of 0.25 molar excess of 1,3-butane diol. The reaction mixture is heated until the acid value falls to 10. Heating is discontinued and the soft polyester resin is treated with a mixture of 2,4-toluene diisocyanate and 2,6-toluene diisocyanate in an amount equivalent to the hydroxy groups in the resin. The amount of diisocyanate required is given by the relationship quoted in Phillips: Polyurethanes, Chemistry, Technology and Properties, Iliffe Books Ltd. 1963, page 121. Briefly the hydroxyl number is multiplied by a factor of 1.55 to give the amount of diisocyanate required per 100 gms of resin. Upon addition of the diisocyanate the resin hardens appreciably to give a solid urethane composition melting at about 100°C.

The urethane product may be melt coated onto butyl rubber, polyvinyl chloride or natural rubber to give a hard, dry coating. When required for use the urethane coating is heated to about 160°C, for example, by an infra red heater and then pressed firmly

against the desired adherand. In about 3 65 minutes a firm strong bond is obtained.

Example II

The procedure of Example I is repeated using neopentyl glycol in place of 1,3-butane diol. The polyurethane composition obtained is dissolved in about its own weight of ethyl acetate or methyl ethyl ketone and is applied to a substrate of butyl rubber, polyvinyl chloride or natural rubber. The solvent is removed by evaporation to give a hard dry polyurethane coating. As Example I the coating is softened by heating and then pressed firmly against the desired adherand. A firm strong bond is obtained.

WHAT WE CLAIM IS:—

1. A polyurethane composition prepared by reacting together i) a polyester obtained by the reaction of a mixture containing isophthalic acid, and a saturated aliphatic dicarboxylic acid of the formula $\text{HOOC}(\text{CH}_2)_n\text{COOH}$, where n is an integer of from 1-6, in a molar ratio in the range 1:1 to 5:1, with 0.1-0.3 molar excess of a $\text{C}_2\text{-C}_6$ saturated aliphatic diol, and ii) an aromatic diisocyanate in an amount equivalent to or in excess of stoichiometric based on the free hydroxyl groups in the polyester.

2. A polyurethane composition according to claim 1, wherein up to 25% by weight of said isophthalic acid is replaced by terephthalic acid.

3. A polyurethane composition according to claim 1 or 2, wherein said saturated aliphatic dicarboxylic acid is adipic acid.

4. A polyurethane composition according to claim 1, 2 or 3, wherein the diol component of the polyester is 1,3-propylene glycol, 1,4-butane diol, neopentyl glycol or 1,6-hexamethylene diol.

5. A polyurethane composition according to any one of the preceding claims, wherein the organic diisocyanate is 2,4-toluene diisocyanate, 2,6-toluene diisocyanate or a diphenyl methane diisocyanate.

6. An adhesive composition comprising a polyurethane composition as claimed in any one of the preceding claims in solution in an organic solvent.

7. A composite structure comprising two or more integral parts joined by a layer of adhesive, wherein said adhesive comprises a polyurethane composition as claimed in any one of claims 1-5.

8. A structure according to claim 7, wherein one or more of said integral parts is composed of butyl rubber.

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